



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,318	04/03/2001	Adolf Stender	64251-022	2510

7590 03/21/2002

Robert E. Muir, Esq.
Husch & Eppenberger, LLC
Suite 1400
401 Main Street
Peoria, IL 61602-1241

EXAMINER

RIBAR, TRAVIS B

ART UNIT	PAPER NUMBER
1711	8

DATE MAILED: 03/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-8

Office Action Summary	Application No.	Applicant(s)
	09/825,318	STENDER ET AL.
	Examiner Travis B Ribar	Art Unit 1711

-- The MAILING DATE of this communication app ars on the cov r sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 19 February 2002.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-30 is/are pending in the application.

4a) Of the above claim(s) 22-30 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-21 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.

4) Interview Summary (PTO-413) Paper No(s) _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of a material in Paper No. 7 is acknowledged.

The traversal is on the ground(s) that a search for the material would include the search for the process of producing the material. This is not found persuasive because there are different issues of patentability in the product and in the process of making the product.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The term "...isocyanate characteristic ..." in claims 14-15 is a term that renders the claim indefinite. The term "... isocyanate characteristic..." is not defined by the claim, the specification does not provide a standard for ascertaining its meaning, and one of ordinary skill in the art would not be reasonably apprised of the limitations of this claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claims 1, 2, 7, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanno et al. as evidenced by von Bittera et al.

Kanno et al. shows an adhesive sheet that comprises a tacky polymer with an elastic microsphere filler (column 1, lines 15-16 and column 6, lines 38-42). The tacky polymer is not particularly limited, and includes any polymer materials commonly used as adhesives, including polyurethane (column 5, lines 28-33). Polyurethane gel is a commonly used adhesive, as shown in von Bittera et al., and therefore Kanno et al. meets the restrictions set forth in claim 1.

The elastic microspheres in Kanno et al. have a diameter of 10 picometers to 250 microns (column 6, lines 3-5, and applicant's claim 7) and are made from an acrylic polymer (column 6, lines 15-19 and applicant's claim 2). The composition in Kanno et al. is shown to include as low as 9.1% elastic microspheres by weight of the entire material (column 4, lines 33-42). The 9.1% by weight value is obtained by dividing the

10 weight parts of elastic microspheres by the 110 weight parts of the total composition, made from 100 weight parts tacky polymer and 10 weight parts elastic microspheres. Kanno et al. therefore meets applicant's claims 1, 2, 7, and 8.

7. Claims 1, 9, 11-13, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Burgdorfer et al. as evidenced by Steppan et al. and Abe.

Burgdorfer et al., cited by the applicant in their IDS form 1449, teaches an undercured polyurethane gel meeting the applicant's claim 9, which may optionally include a filler (claim 1). Elastic microsphere fillers in undercured polyurethane gels are well known in the art and may be seen in Steppan et al. and Abe.

The claimed isocyanate and polyol in Burgdorfer et al. are also the same as the applicant's. The isocyanate functionality of the polyol meets the requirements that the applicant sets forth in claims 11-13 (claims 1 and 4) and the isocyanate (page 5, lines 39-46) is the same as that claimed by the applicant in claim 16. A full translation of Burgdorfer et al. has been ordered.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-11, 16-19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over von Bittera et al. in view of Steppan et al.

Von Bittera et al. shows the use of a polyurethane gel as an adhesive composition. The polyurethane gel is taught to comprise (column 3, lines 19-29) either pure isocyanates or modified isocyanates (applicant's claims 17 and 18, respectively), including biurethised isocyanates (applicant's claim 21), and is an undercured reaction product of polyols and polyisocyanates (applicant's claim 9). Further, the isocyanates shown fulfill the requirements set forth for the isocyanate structure in claim 16.

Von Bittera et al. also teaches that polyethers and polyisocyanates can be used to make the polyurethane gel (column 3, lines 15-16), meeting the specifications of the applicant's claim 10. The polyols used in the invention also have a functionality between 3 and 6, which encompasses the range set forth by the applicant in claim 11.

However, von Bittera et al. does not teach the inclusion of elastic microspheres in the polyurethane gel.

Steppan et al. shows the use of elastic microspheres as filler in a reaction injection molding process that uses polyisocyanates and polyols to create a polyurethane (column 12, lines 36-45). Steppan et al. uses urethanized polyisocyanates (column 3, lines 1-26 and applicant's claim 19) to create the polyurethane and further states that the use of those isocyanates leads to polyurethanes with improved mechanical properties (column 3, lines 37-40).

Steppan et al. also includes elastic microsphere filler in the polyurethane composition in order to create a low-density composition (column 9, lines 7-21). The elastic microspheres (column 10, lines 16-39) comprise a polymer material (applicant's claim 2) that may be expanded vinylidene chloride resin (applicant's claims 3 and 4, using the definition for polyolefin found on page 3, lines 5-7 of the specification). Further, the elastic microspheres are shown to comprise a coating of calcium carbonate, meeting the applicant's claims 5-6.

The diameter of the elastic microspheres is a property inherent to the microspheres that are used in the experiments, as the present invention shows no method for creating the microspheres. The elastic microspheres in Steppan et al. (column 10, lines 22-23) are the same as the elastic microspheres used in the present invention (page 7, line 28). Both are Dualite 6001 AE and are therefore assumed to have the same diameter, which meets the restrictions set forth in claim 7. Steppan et al. also states that the microspheres should be used in an amount of about 0-20% by weight of the resin (column 10, lines 10-21), fulfilling the applicant's claim 8.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use elastic microspheres in a polyurethane gel in order to decrease the density of the polyurethane gel. It would have also been obvious to a person of ordinary skill in the art to use a urethanized polyisocyanate in the production of the polyurethane gel in order to produce a gel with improved mechanical characteristics. Therefore it would have been obvious to combine Steppan et al. with von Bittera et al. to obtain the invention as specified in claims 1-11, 16-19, and 21.

10. Claims 1-3, 7, 9-11, 16-19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over von Bittera et al. in view of Abe.

Von Bittera et al. shows the use of a polyurethane gel as an adhesive composition. The polyurethane gel is taught to comprise (column 3, lines 19-29) either pure isocyanates or modified isocyanates (applicant's claims 17 and 18, respectively), including biurethised isocyanates (applicant's claim 21), and is an undercured reaction product of polyols and polyisocyanates (applicant's claim 9). Further, the isocyanates shown fulfill the requirements set forth for the isocyanate structure in claim 16.

Von Bittera et al. also teaches that polyethers and polyisocyanates can be used to make the polyurethane gel (column 3, lines 15-16), meeting the specifications of the applicant's claim 10. The polyols used in the invention also have a functionality between 3 and 6, which encompasses the range set forth by the applicant in claim 11.

However, von Bittera et al. does not teach the inclusion of elastic microspheres in the polyurethane adhesive gel.

Abe teaches an adhesive composition that includes a synthetic adhesive mixed with elastic microspheres in order to aid the escape of air from between the adhesive and the substrate during application. The adhesive materials that can be used in the invention are wide-ranging and not particularly limited or defined in Abe. The adhesive may be one of many synthetic adhesives, including polyurethane and polyurethane gel, which have rubber-like elastic characteristics (column 6, lines 38-42).

The elastic microspheres taught in Abe comprise a polymer (applicant's claim 2), which may be made from a vinyl chloride resin (applicant's claim 3, using the definition for polyolefin found on page 3, lines 5-7 of the specification). The microspheres have diameters of 10-100 microns (column 5, lines 40-41), which falls within the range specified in claim 7.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use elastic microspheres in a polyurethane gel adhesive in order to aid the escape of air from between the adhesive and a substrate during application. Therefore it would have been obvious to combine Abe with von Bittera et al. to obtain the invention as specified in claims 1-3, 7, 9-11, 16-19, and 21.

11. Claims 4-6 rejected under 35 U.S.C. 103(a) as being unpatentable over von Bittera et al. in view of Abe as applied to claim 2 above, and further in view of Steppan et al.

Von Bittera et al. in view of Abe does not teach that the elastic microspheres used can be made from an expanded material, nor that the microspheres could be coated with calcium carbonate (applicant's claims 4-6).

The elastic microspheres in Steppan et al. (column 10, lines 16-39) are made from an expanded vinylidene chloride resin (applicant's claim 4). This is a vinyl chloride resin, shown by Abe to be suitable for use in that invention (column 4, line 28). Further, the elastic microspheres in Steppan et al. are shown to inherently include a coating of calcium carbonate, meeting the applicant's claims 5-6.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the elastic microspheres shown in Steppan et al. in the polyurethane gel taught by von Bittera et al. in view of Abe et al. with the expectation of achieving similar results. Therefore it would have been obvious to combine Steppan et al. with Abe and von Bittera et al. to obtain the invention as specified in claims 4-6.

12. Claims 1-2, 7-11, 16-19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over von Bittera et al. in view of Kanno et al.

Von Bittera et al. shows the use of a polyurethane gel as an adhesive composition. The polyurethane gel is taught to comprise (column 3, lines 19-29) either pure isocyanates or modified isocyanates (applicant's claims 17 and 18, respectively), including biurethised isocyanates (applicant's claim 21), and is an undercured reaction product of polyols and polyisocyanates (applicant's claim 9). Further, the isocyanates shown fulfill the requirements set forth for the isocyanate structure in claim 16.

Von Bittera et al. also teaches that polyethers and polyisocyanates can be used to make the polyurethane gel (column 3, lines 15-16), meeting the specifications of the applicant's claim 10. The polyols used in the invention also have a functionality between 3 and 6, which encompasses the range set forth by the applicant in claim 11.

However, von Bittera et al. does not teach the inclusion of elastic microspheres in the polyurethane adhesive gel.

Kanno et al. shows an adhesive sheet that comprises a tacky polymer with an elastic microsphere filler (column 1, lines 15-16) and is applied to claims 1, 2, 7, and 8

as shown above. The elastic microsphere filler shown in Kanno et al. may be added to any polymer adhesive, also as shown above, and serves to improve the adhesive properties of the adhesive material that it is added to (column 2, lines 24-29). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an elastic microsphere filler in the adhesive gel in von Bittera et al. in order to improve the adhesive properties of the polyurethane gel. Therefore it would have been obvious to combine Kanno et al. with von Bittera et al. to obtain the invention as specified in claims 1-2, 7-11, 16-19, and 21.

13. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over von Bittera et al. in view of Steppan et al. as applied to claim 1 above, and further in view of Konig et al.

Bittera et al. and Steppan et al. do not mention the use of allophanated isocyanates in the polyurethane compositions that they teach. Konig et al. teaches a process for making allophanated isocyanates for use in creating polyurethanes and teaches that the use of allophanated isocyanates in the production of a polyurethane leads to a shorter reaction time. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use an allophanated isocyanate in the creation of the polyurethane gel composition taught by Bittera et al. in view of Steppan et al., shown above, in order to decrease the reaction time of the materials used.

14. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over von Bittera et al. in view of Abe as applied to claim 1 above, and further in view of Konig et al.

Bittera et al. and Abe et al. do not mention the use of allophanated isocyanates in the polyurethane compositions that they teach. Konig et al. teaches a process for making allophanated isocyanates for use in creating polyurethanes and teaches that the use of allophanated isocyanates in the production of a polyurethane leads to a shorter reaction time. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use an allophanated isocyanate in the creation of the polyurethane gel composition taught by Bittera et al. in view of Abe et al., shown above, in order to decrease the reaction time of the materials used.

15. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over von Bittera et al. in view of Kanno et al. as applied to claim 1 above, and further in view of Konig et al.

Bittera et al. and Kanno et al. do not mention the use of allophanated isocyanates in the polyurethane compositions that they teach. Konig et al. teaches a process for making allophanated isocyanates for use in creating polyurethanes and teaches that the use of allophanated isocyanates in the production of a polyurethane leads to a shorter reaction time. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use an allophanated isocyanate in the

creation of the polyurethane gel composition taught by Bittera et al. in view of Kanno et al., shown above, in order to decrease the reaction time of the materials used.

16. Claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burgdorfer et al. in view of Steppan et al.

Burgdorfer et al. is applied to claim 1 as shown above. It does not teach the specifics of the elastic microsphere fillers, though.

Steppan et al. is applied to claims 2-8 as shown above, and teaches that an elastic microsphere may be used as filler in a polyurethane gel in order to reduce the density of the gel. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to add elastic microspheres to a polyurethane gel in order to reduce the density of the gel. Therefore it would have been obvious to combine Steppan et al. with Burgdorfer et al. to obtain the invention as specified in claims 2-8.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hurley et al. teaches the use of elastic microspheres as filler in polyurethane.

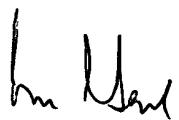
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis B Ribar whose telephone number is (703) 305-3140. The examiner can normally be reached on 8:30-5:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Travis B Ribar
Examiner
Art Unit 1711

TBR
March 18, 2002


James J. Seidleck
Supervisor
1711
3/18/02